slots on the SSR channel. The mobile terminal is assigned to an RR channel time slot at the call setup time, and is used by the base station to respond to the reservation request sent by the mobile terminal on the SSR channel time slot. The RR channel time slot can also be used by the base station to inform the mobile terminal when there is a request on the network side of the system for transmission of data to the terminal. Whenever the mobile terminal receives a message on the RR channel time slot, it knows to begin sensing the traffic channel on the forward link based on information received in the message on the RR time slot.

Note that the RR channel may be designed so that the base station only transmits k repetitions of an RR channel PN code (RRC-PN) so as to allow the terminal to receive energy on its assigned RR channel time slot which then directs the terminal to the forward link traffic channel to receive messages. The RR channel may also be designed to include a short message.

As an example, consider an SSR channel which is 20 msec long and is divided into 48 time slots. Assuming a PN code with period **128** is used, 32 periods of the PN code may be fit into one time slot. In order to take into account the round trip propagation delay between the mobile terminal and the base station unit, the PN code should be repeated 31 times within the minislot.

Simulation results indicate that 37% of the time the synchronization delay is 20 msec (one transmission attempt), 36% of the time the synchronization delay is 40 msec, 18% of the time the synchronization delay is 60 msec, 6% of the time the synchronization delay is 80 msec, and 3% of the time the synchronization delay is 100 msec. Accordingly, the present invention has lower access delay, higher throughput, reduced base station complexity, and is robust to traffic variations.

Two types of handoffs may occur during a packet data call. If the terminal is in the process of data transmission and is put in soft handoff with other cells/sectors or a hand handoff is carried out, the base station will send a new synchronization channel assignment message to the terminal through the traffic channel. The message specifies a new synchronization channel, a time slot and a sector by which the mobile terminal will make future access attempts. If the terminal is not on a traffic channel, i.e. it is in idle mode and carries out an idle handoff according to the IS-95 standard to another sector, then the terminal will be required to relinquish both its synchronization channel and its time slot on the old cell/sector, and then obtain a new synchronization channel and time slot on the new cell.

It will be apparent to those skilled in the art that various modifications and variations can be made to the algorithm of the present invention without departing from the spirit or scope of the invention. Thus, it is intended that the present invention cover the modifications and variations of this invention provided they come within the scope of the appended claims and their equivalents.

What is claimed:

**1**. A code division multiple access (CDMA) communication system comprising a base station and a plurality of assigned mobile terminals coupled at least one said base station, wherein said base station communicates with said plurality of assigned mobile terminals using at least one transmitter and at least one receiver to transfer at least one of many data bursts, and said transmitter and receiver communicate using a plurality of communication channels comprising:

forward link channels which include a pilot channel, a synchronization channel, at least one paging channel, at least one forward traffic channel, and at least one reservation response channel;

reverse link channels which include at least one access channel, at least one reverse traffic channel, and at least one synchronous synchronization-reservation channel; and

means for establishing a communication link between said base station and said plurality of assigned mobile terminals.

**2**. A code division multiple access (CDMA) communication system as recited in claim **1**, wherein said means for establishing a communication link further comprises:

means for maintaining contact between said base station and a first of said plurality of assigned mobile terminals;

means for synchronizing transmissions between said base station and the first of said plurality of assigned mobile terminals;

means for adjusting the transmitting power of the first of said plurality of assigned mobile terminals so as to allow the transfer of said data bursts; and

means for terminating said communications link.

**3**. A code division multiple access (CDMA) communication system as recited in claim **2** wherein said synchronous synchronization-reservation channels transmit a PN code identifying the sector of the cell that the transmitting mobile terminal is in.

**4**. A code division multiple access (CDMA) communication system as recited in claim **3** wherein said synchronous synchronization-reservation channels for transmitting a preamble are each divided into a plurality of frames and said frames are further divided into a plurality of time slots, each said time slots corresponding to an individual mobile terminal.

**5**. A code division multiple access (CDMA) communication system as recited in claim **4** wherein said preamble transmitted on assigned synchronization-reservation channel time slot comprises at least one repetition of the PN code in one time slot.

**6**. A code division multiple access (CDMA) communication system as recited in claim **5** wherein said base station synchronizes to said mobile terminal using said preamble, and said base station transmits a channel assignment message on one of said reservation response channels.

**7**. A code division multiple access (CDMA) communication system as recited in claim **5** wherein the mobile terminal uses said channel assignment message to transmit data at the assigned time slot.

**8**. A method of operating a code division multiple access (CDMA) communication system comprised of a plurality of mobile terminals operating in sector of a cell which is assigned to a base station, wherein said base station communicates with said plurality of assigned mobile terminals using at least one transmitter and at least one receiver to transfer at least one of many data bursts, the method comprising the steps of:

maintaining a constant link between said base station and said plurality of mobile terminals with a pilot signal;

accessing said base station by a first of said mobile terminals with an origination message;

assigning a synchronous synchronization-reservation channel time slot to the first mobile terminal by said base station in response to said origination message;

synchronizing the first mobile terminal with said base station using said assigned time slot;